

# 030003113

# (12) United States Patent

VanEe

(10) Patent No.:

US 6,511,374 B2

(45) Date of Patent:

Jan. 28, 2003

(54)	AGRICULTURAL COMBINE RESIDUE HANDLING SYSTEM			
(75)	Inventor:	Marvin VanEe, Eldridge, IA (US)		

(70) A .: Con Companylon Porior NVI (110

(73) Assignee: Case Corporation, Racine, WI (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 4 days.

(21) Appl. No.: 09/776,091

(22) Filed: Feb. 2, 2001

(65) Prior Publication Data

US 2002/0107056 A1 Aug. 8, 2002

(51)	Int. Cl.7	A01F 12/40
(52)	U.S. Cl.	

# (56) References Cited

#### U.S. PATENT DOCUMENTS

1,758,445 A		5/1930	Kay
2,081,807 A		5/1937	Gabriel
2,386,729 A	*	10/1945	Watter 411/338
2,990,667 A		7/1961	Schwalm
3,214,897 A		11/1965	Phares
3,309,854 A		3/1967	Mitchell et al.
3,397,525 A	٠	8/1968	Woodring 56/294
3,423,920 A	*	1/1969	Woodring et al 56/294
3,465,507 A	٠	9/1969	Fishaw 56/294
3,477,214 A	*	11/1969	Rogers 56/295
3,604,188 A	*	9/1971	Mott 56/294
3,690,359 A	•	9/1972	Wenzel et al 241/101.742

3,693,335 A	• 9/1972	Mathews 56/294
3,786,996 A	1/1974	Richter
4,292,795 A	• 10/1981	Linn 56/503
4,612,941 A	* 9/1986	Kunde 460/112
5,042,973 A	8/1991	Hammarstrani
5,205,667 A	* 4/1993	Montgomery, Sr 403/151
5,232,405 A		Redekop et al.
5,272,861 A	• 12/1993	Roynberg 56/504
5,482,508 A		Redekop et al.
5,673,545 A	* 10/1997	Friesen 56/255
5,673,545 A	• 10/1997	Friesen 56/255

## FOREIGN PATENT DOCUMENTS

215733

11/1960

\* cited by examiner

Primary Examiner—Robert E. Pezzuto
Assistant Examiner—Afpád Fábián Kovács

## (57) ABSTRACT

A residue handling system for an agricultural combine including a residue chopper that provides enhanced air flow for evenly distributing crop materials onto a crop field. A hub and blade assembly accurately positions flail blades and resists fatigue stresses. Each flail blade includes an outer portion that is angled longitudinally away from a plane transverse to the axis of rotation. In a mated blade pair embodiment, the leading edges of the paired flail blades may be closer to each other than the trailing edges, or vice versa. Also, the leading edges of the flail blade pair may be the same distance away as the trailing edges of the pair, beneficially directing discharge sideways in a preferred common direction. The assembly includes a mounting support post that has a width substantially equal to the distance between two mated blades. The mated blades are installed directly against the sides of the mounting support, without spacer bushings, using only three connector elements.

## 10 Claims, 5 Drawing Sheets

